NAVY TRAINING SYSTEM PLAN

FOR THE

VH-60N HELICOPTER

N88-NTSP-A-50-0008/P

SEPTEMBER 2001

VH-60N HELICOPTER

EXECUTIVE SUMMARY

This Navy Training Systems Plan provides an estimate of manpower, personnel, and training requirements to support the employment concepts currently in use for the VH-60N Helicopter. The VH-60N has been in use for approximately 12 years and is a helicopter transport for the President of the United States, Vice President, and other visiting heads of state. It has seating provisions for 10 passengers and an aircrew, which consists of a pilot, co-pilot, crewchief, and a communication system operator. As an executive transport, it has an interior suitable for executive travel and receives extensive care and maintenance exceeding normal standards to keep the aircraft in superior condition. The VH-60N can be prepared for loading and storage onto an Air Force C-5A/B, and C-17, allowing for transport on short notice. It is also capable of being loaded onto an Air Force C-130 and C-141. Marine Helicopter Squadron One (HMX-1), is the sole helicopter support for executive transport throughout the United States and overseas.

VH-60N is in the Operations and Support phase of the Defense Acquisition System. The VH-60N is expected to remain in service until the year 2015, after which a determination will be made whether it should undergo a Service Life Extension Program, which could potentially extend it's life to the year 2025. Naval Air System Command (NAVAIRSYSCOM) contracts for instruction of pilots, communication system operators, and maintenance personnel at the squadron in HMX-1 Quantico, Virginia for the VH-60N. No specific military aircrew or maintenance training exists for the VH-60N. On November 26, 1995, the Secretary of Defense directed the Department of the Navy to procure a VH helicopter pilot simulator for HMX-1. A contract to procure the VH-60N Aircrew Procedures Trainer (APT) was awarded in April 2000. The APT, when delivered, will be maintained and operated by the contractor for a period of up to two years. NAVAIRSYSCOM is currently determining what approach to take to Contractor Operation and Maintenance of Simulators (COMS), after the APT Contractor Logistic Support period.

HMX-1 has an outstanding safety record. Increased operational tempo has made it a challenge to meet the training requirements of personnel and the decreased availability of aircraft for training purposes. Although the overall training program is sufficient in many areas, recommendations for improvement are noted in the Training Concepts of this document. A Training Objectives Analysis was conducted on HMX-1's curriculum in January 2000 which supports utilizing technology to allow modular lesson formats and Interactive Multimedia Instruction, as well as providing a Composite Maintenance Training Device for hands on learning. Currently, an automated Curriculum Outline is being developed which will allow the instructor to match courses with instructional media, learning objectives, and test strategies. It will also enable the instructor to choose the best media to teach a particular course. The automated Curriculum Outline was delivered May 2001. Updates to this NTSP will include any additional improvements to the training program.

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LIST OF ACRONYMS

ACT	Aircrew Coordination Training
APML	Assistant Program Manager for Logistics
APT	Aircrew Procedures Trainer
APU	Auxiliary Power Unit
CNO	Chief of Naval Operations
COMM/NAV	Communication/Navigation
DSS	Department of Safety and Standardization
ECS	Environmental Control System
EPA	Environmental Protection Agency
HMX-1	Marine Helicopter Squadron One
IETM	Interactive Electronic Technical Manual
ISSL	Initial Spares Support List
MATMEP	Maintenance Training Management and Evaluation Program
MNS	Mission Needs Statement
MOS	Military Occupational Specialty
MRC	Maintenance Requirements Cards
NA	Not Applicable
NAS	Naval Air Station
NATOPS	Naval Air Training and Operating Procedures Standardization
NAVAIRSYSCOM	Naval Air Systems Command
NTSP	Navy Training System Plan
OEM	Original Equipment Manufacturer
OJT	On-the-Job-Training
OPNAV	Office of the Chief of Naval Operations OPNAV
OPNAVINST	Office of Chief of Naval Operations Instruction
OPS	Operations
PMA	Program Manager, Air
RFT	Ready For Training
SPAR	Special Progressive Aircraft Rework

VH-60N HELICOPTER

LIST OF ACRONYMS

TC	Training Contractor
TD	Training Device
TMS	Type/Model/Series
TTE	Technical Training Equipment
USMC	United States Marine Corps
VATS	Vibration Analysis Test Set

VH-60N HELICOPTER

PREFACE

This Proposed Navy Training Systems Plan (NTSP) for the VH-60N Helicopter was prepared as part of the NTSP update process within guidelines set forth in Navy Training Requirements Documentation Manual, Office of the Chief of Naval Operations (OPNAV) Publication P-751-1-9-97. This NTSP reflects changes that have occurred since the VH-60N Draft NTSP, N88-NTSP-A-50-0008/D, dated December 2000. The major changes to this NTSP version consist of the following:

- Addition of an Aircrew Procedures Trainer (APT) for the VH-60N.
- Incorporation of review comments by Program Manager, Air (PMA)261 and PMA205.

PART I TECHNICAL PROGRAM DATA

A. NOMENCLATURE-TITLE-PROGRAM

1. Nomenclature-Title-Acronym. VH-60N Helicopter

2. Program Element. 0901212M

B. SECURITY CLASSIFICATION

1. System Characteristics..... Unclassified
2. Capabilities..... Unclassified
3. Functions ..... Unclassified

C. MANPOWER, PERSONNEL, AND TRAINING PRINCIPALS

OPNAV Principal Official (OPO) Program Sponsor ..... CNO (N78)

OPO Resource Sponsor..... CNO (N78)

Marine Corps Program Sponsor..... HQMC (APW51)

Developing Agency..... NAVAIRSYSCOM (PMA 2614)

Training Agency ..... CNET

Training Support Agency..... NAVAIRSYSCOM (PMA 205-2B)

Manpower and Personnel Mission Sponsor ..... HQMC-Code M

Director of Naval Training..... CNO (N7)

Marine Corps Force Structure..... MCCDC (C53)

D. SYSTEM DESCRIPTION

1. Operational Uses. The VH-60N provides helicopter transportation for the President of the United States, Vice President, members of the President's Cabinet, and foreign dignitaries as directed by the Director, White House Military Office. Mission detachments are completely self-contained and supported by dedicated aircrew, maintenance, technical representatives, security personnel and logistics for the duration of the event.

2. Foreign Military Sales. Not Applicable (NA)

E. DEVELOPMENTAL TEST AND OPERATIONAL TEST. All Developmental and Operational Testing were successfully completed prior to the development of this NTSP.

F. AIRCRAFT AND/OR EQUIPMENT/SYSTEM/SUBSYSTEM REPLACED. The VH-60N replaced the VH-1N in 1988.

G. DESCRIPTION OF NEW DEVELOPMENT

1. Functional Description. The VH-60N is single main rotor, twin engine helicopter, designed as an executive transport and has been in use for over 12 years. The VH-60N aircraft systems, furnishings and equipment have been optimized for executive transport missions. The crew consists of a pilot, copilot, crewchief and communications systems operator. The main and tail rotor blades, stabilator, and tail rotor pylon can fold to reduce dimensions for air transportability or storage.

2. Physical Description

DIMENSIONS OF THE VH-60N		
Folded length (pylon flight position)	42 Feet	1 Inch
Rotor folded length (pylon flight position)	53 Feet	9 Inches
Length overall (rotors turning)	64 Feet	11 Inches
Fuselage length	50 Feet	11 Inches
Height	16 Feet	10 Inches
Fuselage width	7 Feet	9 Inches
Folded width	9 Feet	9 Inches
Main rotor diameter	53 Feet	8 Inches
Tail rotor diameter	11 Feet	0 Inches
Ground clearance fuselage	1 Foot	7 Inches
Minimum ground clearance (ALQ144)	0 Feet	8.5 Inches
Turning Radius	41 Feet	8 Inches
Clearance for 180 degree turn	84 Feet	0 Inches

3. New Development Introduction. NA

4. Significant Interfaces. NA

5. New Features, Configurations, or Material. NA

H. CONCEPTS

1. Operational Concept. The, VH-60N has been in operation for approximately 12 years and is designed as an executive transport. The aircrew consists of a pilot, co-pilot, communications system operator, and crewchief. When on a mission, the detachment is completely self-contained, supported by dedicated aircrew, maintenance, technical representatives, security personnel and logistics. In addition to its Executive air support role, it also provides support for emergency evacuation, development of new systems, and training of new helicopter tactics.

2. Maintenance Concept. The Maintenance Concept for the VH-60N is based on three levels of maintenance as stated in the Naval Maintenance Program Manual, Office of Chief of Naval Operations Instructions (OPNAVINST) 4790 series, organizational, intermediate, and depot.

Maintenance at Marine Helicopter Squadron One (HMX-1) is organized into two separate departments, the Executive Aircraft Maintenance and United States Marine Corps (USMC) Aircraft Maintenance. The Executive Aircraft Maintenance also known as Whiteside" or "Cage" maintenance will referred to as the Whiteside in this document. The USMC Maintenance Aircraft Department, also known as the "Greenside" or "Stake" maintenance will be referred to as the Greenside in this document. The Whiteside maintenance department maintains the VH-60N.

a. Organizational. The organizational level maintenance consists of those maintenance actions normally performed by an operating activity in support of its day-to-day operations. Due to the highly structured missions of executive transport, aircraft configuration is tightly controlled.

(1) Preventive Maintenance. Preventive Maintenance consists of scheduled inspections and servicing at specific intervals as required by the applicable Maintenance Requirements Cards (MRC) procedures and is performed by the Squadron's Flight Line, Airframe, and Avionics Maintenance personnel. For the VH-60N, these inspections are performed in four phases after every 150 hours of flight. Preventive actions performed on the aircraft include corrosion inspection, wiping down the outside of the aircraft by hand after each flight regardless of flight time, lubrication and servicing, and daily/turnaround and special inspections.

(2) Corrective Maintenance. Corrective Maintenance is unscheduled and consists of fault isolation, repair, and replacement of components when verified as faulty. Built-In Test or test sets are used on the appropriate systems to determine if certain parts or assemblies are in need of repair or replacement. The Squadron's Flight Line, Airframe, and Avionics Maintenance Personnel perform these actions.

b. Intermediate. Intermediate level maintenance is performed on those Weapon Replacement Assemblies and Shop Replaceable Assemblies beyond the capability of the organizational maintenance level activity. These assemblies are more specialized and complex requiring a higher level of skill to repair the faulty component. Limited intermediate level maintenance support is provided for non-flight critical items. A local, intermediate component, repair list is published detailing components that are test and check, limited repair, or repaired at the intermediate level. Facilities at Naval Air Station (NAS) Patuxent River, Maryland are used for selected VH-60N avionics. Component repairs beyond the capabilities of this facility are forwarded to the appropriate contracted Original Equipment Manufacturer (OEM). The intermediate level, engine shop in the Whiteside facility performs maintenance functions on T-700 engines and T62 Auxiliary Power Unit (APU) and assists in organizational level tasks performed by other shops. Components and assemblies requiring maintenance above the capabilities of the squadron are sent to OEM facilities for repair. Replacement parts are acquired from the contracted OEM. Special clearances and inspection processes are in place to maintain the security of VH components and the integrity of the closed loop VH supply system.

c. Depot. Depot level maintenance consists of major overhaul of the aircraft or the rebuilding, manufacture, and modification of parts, assemblies, and subassemblies beyond the capabilities of the Intermediate Maintenance Activity. Scheduled depot maintenance, occurs at the expiration of 28 months or 2,400 flight hours, whichever comes first, and is accomplished by the OEM.

d. Interim Maintenance. NA

e. Life-Cycle Maintenance Plan. The plan requires that the VH-60N undergoes a Special Progressive Aircraft Rework (SPAR) every 1,600 hours flight time or 30 months, whichever comes first. SPAR is an enhanced version of the Standard Depot Level Maintenance and includes partial disassembly of the airframe, replacement of components, refurbishment of interior furnishings, and repainting the aircraft. The requirements are outlined in the revised SPAR Specification Manual in accordance with Naval Air Systems Command (NAVAIRSYSCOM) Instruction 4710.1. The VH-60N has a service life of 10,000 flight hours and will remain in service until approximately 2015. A determination will be made whether to place the VH-60N under Service Life Extension Program, which could extend the lifetime of the helicopter.

3. Manning Concept. HMX-1 is the largest permanently formed aircraft squadron in the Marine Corps. The major divisions within the unit encompass: Administration, Operations, Logistics, Department of Safety and Standardization (DSS), White House Liaison Office, Executive Alert Facility, Plans, Security, Communications, Fiscal, Aviation Supply, Operational Test & Evaluation, Whiteside, and Greenside.

Specific Military Occupational Specialties (MOSs) do not exist for the VH-60N since the training is done by a contractor, rather than the military. Personnel assigned to operate and maintain the VH-60N, are selected from the population of marine forces, aviation maintenance personnel and do not have any previous experience on the platform. Personnel are specifically recruited for HMX-1 and spend approximately one year on the Greenside while intensive

background investigations are conducted by the appropriate Department of Defense agency. Once personnel are given appropriate clearance and access they are eligible for transfer to the Whiteside.

The number of detachments varies according to the number of missions. Each detachment is self-contained and supported by dedicated aircrew, maintenance, technical representatives, security personnel and logistics for the duration of the event in compliance with the Standard Operating Procedures in the Whiteside Trip Leader Manual.

4. Training Concept. There are no specific Navy Training Schools, "C", or Fleet Replacement Enlistment Skills Training in existence for the VH-60N maintenance shop personnel for theVH platform. The job familiarization process is heavily dependent upon On-the-Job-Training (OJT). All aircraft familiarization and mission training are handled on the squadron level, with the exception of the pilots, who currently complete simulator training at NAS Jacksonville, Florida. HMX-1 currently contracts initial and follow-on training of the VH-60N to an external Training Contractor (TC).

1. Pilot: Flight scheduling is a very involved process in a squadron that currently has 75 pilots on-hand and flies four different Type/Model/Series (TMS) helicopters. The TMS helicopters currently requiring Primary Aircraft Authorization are the VH-3D, VH-60N, CH-53E, and CH-46E. Only the first two are flown for the "Whiteside." The majority of pilots are qualified on three platforms. On 26 November, the Secretary of Defense directed the Department of the Navy to procure a VH pilot simulator for HMX-1. A contract to procure the VH-60N APT was awarded in April 2000 with a Ready For Training (RFT) date of August 2002. After fielding of the APT, HMX-1 will have the capability to conduct both initial and refresher pilot training locally. The, APT is being funded by PMA-261 and is being built into a re-locatable enclosure on a pad adjacent to the Cage area along with another enclosure being built for office/debrief space.

The squadron does not have access to any aircraft simulators at HMX-1 Quantico, Virginia. The HMX-1 pilots use the Navy simulators located at NAS Jacksonville, Florida that belong to the Commander Helicopter Anti-Submarine Wing Atlantic Fleet. Pilots may receive training in standard fleet SH-60 and SH-3 simulators prior to commencing the VH syllabus. After that, pilots receive only annual refresher training in both simulators. The APT trainer will enable personnel to perform pilot groundwork training. Primary functions of the APT will allow for practical application in the areas of pilot groundwork, including emergency procedures. Once delivered, the APT is expected to successfully accomplish the following goals by increasing aircraft availability and supporting the following:

- The current pilot courses being conducted at HMX-1.
- Refresher training.
- Enabling pilots to remain in compliance with OPNAVIST 3710.7.

The current pilot courses are being evaluated to incorporate the APT in the training. Future versions of this NTSP will, update the changes that impact the courses, such as the

System Familiarization Course, and whether additional days are added to the course to incorporate the APT.

2. Aircrew: Aircrew Coordination Training (ACT) is the Naval Aviation term for Crew Resource Management. Three officers will implement the ACT program at HMX-1, after they receive ACT instructor designation by attending the Navy's instructor's course at NAS Pensacola, Florida.

Formal documented training is conducted at two safety stand-downs each year. The training includes lectures and videotapes in combined pilot and aircrew sessions. Pilots and aircrew are evaluated on ACT skills annually during instrument written exams and check flights.

The DSS and Operations (OPS) monitor and track all aircrew qualifications for the squadron. DSS publishes a monthly 30-60-90 day report that goes to OPS and the Commanding Officer for upcoming instrument and Naval Air Training and Operation Procedures Standardization (NATOPS) defined checkrides.

3. Maintenance: Maintenance training is provided at HMX-1 Quantico, Virginia and attended by approximately 183 personnel per year who have not had any prior experience on this specific platform, 25 % arriving directly from school after recruit training. Due to the operational requirements, missions, and scheduled depot maintenance events, training is impacted by not having aircraft available for OJT, and by disrupting the class schedule.

The Follow-on TC, using HMX-1 directives, has designed and developed the curriculum content, classroom training aides, instructor guides and student manuals for traditional classroom familiarization training of pilots and maintenance personnel. The annual training schedule is set by the TC and modified by the squadron's mission load. Due to the squadron's mission requirements, rescheduling personnel for training is more the rule, rather than the exception. This environment of frequent mission requirements lends itself to a modular lesson format and Interactive Multimedia Instruction. Enhancing the training program would accomplish the following goals:

- Maximize squadron operational safety
- Ensure the rapid mastery of job tasks by pilot and maintainers
- Provide the highest level of aircraft availability and crew readiness

4. Future Training Environment Description. The areas of future training enhancements for the HMX-1 Squadron are:

- Initial Maintenance Training
- Initial Pilot Aircraft Systems Training
- Refresher Job Training
- Specialized Aircraft Systems Training, (e.g. new systems, Engineering Change Proposal, Airframes Bulletin, Avionics Change, etc.)

- Deployable Training, (e.g. Just-In-Time Training, virtual expert, remote support, etc.)

The above lists general recommendations of possible future improvements to the training program. Enhancements to the training program are being identified and developed with implementation dates planned for June 2001. Specific improvements will be a Curriculum Outline for the VH-60N lessons that will be automatically generated through a database, which will identify all learning objectives, instructional strategies, and highlight the academics, as well as APT flight events. It will also enable an instructor to choose the best media for a particular lesson plan. As funding becomes available and additional enhancements are implemented, future versions of this NTSP will reflect any changes to the training program.

In addition, acquisition of the following Training Devices further supports the training goals.

Note: A contract for a VH-60N Maintenance Trainer Specification was completed January 14, 2000 for PMA 205, PMA-261, and HMX-1. PMA205 submitted a PR03 issue sheet for procurement of a Composite Maintenance Trainer in 2002 with an expected delivery date of December 2004.

DEVICE	LOCATION	COMMENTS
VH-60N Composite Maintenance Trainer	To be located at HMX-1 Quantico, Virginia	Ideally would contain hydraulic and engine components. Mission Needs Statement (MNS) signed, planned FY04 procurement.
VH-60N APT	To be located at HMX-1 Quantico, Virginia	Device 2F181, estimated fielding at HMX-1 August 2002
Environmental Control System (ECS) Trainer Pallet	HMX-1 Quantico, VA	Representative of system installed on helicopter. Serves as training aid for VH-60N ECS course

The following technology will improve the five areas of training and the associated goals:

- Enhanced classroom instruction to employ sophisticated Computer Assisted Instruction with supporting Interactive Multimedia Lecture System.
- Multimedia Training Facility to include use of self-paced Interactive Courseware.
- Flight simulators and maintenance composite trainers for both TMS aircraft to be used in conjunction with structured training.
- Tracking of all training records and student information via Computer Managed Instruction.

- Simulators, Part-Task Trainers, and Composite Trainers will be used for the efficient development of OJT and systems training.
- Employ the use of Interactive Electronic Technical Manual (IETM), Personal Electronic Display Devices and Electronic Performance Support System for initial classroom, refresher and deployable training.
- Other deployable training resources could involve Compact Disc Read Only Memory, Digital Video Disc, laptop computers, Internet, Navy Wide Area Network, and Video Tele-Training.

The above lists general recommendations for possible future improvements to the training program. A syllabus of instruction is being developed in compliance with OPNAVIST 3710.7. Enhancements to the training program are being identified and developed, and implementation began in June 2001. Specific improvements are a Curriculum Outline for the VH-60N lessons that will be automatically generated through a database, which will identify all learning objectives, instructional strategies, and highlight the academics, as well as APT flight events. It will also enable the instructor to choose the best media for teaching a particular course. Future versions of this NTSP will reflect any changes to the training program, as funding becomes available and additional enhancements are implemented.

a. Initial Training. NA

b. Follow-on Training. Follow-on training for the VH-60N is provided to personnel selected to the Executive Transport from the core of personnel assigned to the squadron. These personnel are originally ordered into the command under the Rotary Wing Maintenance Personnel: CH-53E, CH-46, or H-1 MOSs. Once assigned to this department, contracted instructors give these personnel training. The following courses have been developed by TC instructors to provide VH-60N training. No course numbers are assigned to VH-60N training. An additional day may be added to the course length of the System Familiarization Courses, to incorporate the APT. Updates to this NTSP will reflect any changes.

(1) Pilot Training

Title	**VH-60N System Familiarization**
Description	This course provides qualified Marine Pilots familiarization with the VH-60N airframe and powerplant systems operation, controls and indications.
Location	HMX-1 Quantico, Virginia
Length	4 days
RFT date	Currently available
TTE/TD	VH-60N Main Gearbox Quick Change Unit

Skill identifier	MOSs 7562, 7563, 7564, 7565, 7566
Prerequisites	All students must be qualified U.S. Government helicopter pilots.

Title	**Pilot COMM/NAV System Familiarization**
Description	This course provides the qualified Marine Pilots with familiarization of the VH-3D/VH-60N Communication, Navigation and Countermeasures systems.
Location	HMX-1 Quantico, Virginia
Length	3 days
RFT date	Currently available
TTE/TD	Computer Based Training
Skill identifier	MOSs 7562, 7563, 7564, 7565, 7566
Prerequisites	All students must be qualified U.S. Government helicopter pilots and should have previously attended the VH-3D/VH-60N Pilot Systems courses.

(2) Maintenance Training. Maintenance personnel are comprised of Avionics, Flight Line, and Airframes divisions.

a. Avionics

Title	**VH COMM/NAV Organizational Maintenance Course**
Description	This course provides qualified technicians to perform operational checks, troubleshooting and maintenance to systems and components at the organizational level on the VH-60N.
Location	HMX-1 Quantico, Virginia
Length	15 days
RFT date	Currently available
TTE/TD	None required
Skill Identifier	MOSs 6322, 6323, 6324
Prerequisites	Prior technical training and experience as a helicopter Navigation/Communication System technician, and have attended the VH-3D and VH-60N electrical systems maintenance courses.

Title	**VH-60N Electrical Systems Maintenance Course**
Description	This course provides qualified aircraft line maintenance technicians/crewchiefs to perform operational checkout, troubleshooting, component replacement, and adjustment of VH-60N systems and components at the organizational maintenance level.
Location	HMX-1 Quantico, Virginia
Length	15 days
RFT date	Currently available
TTE/TD	Visual training aids only
Skill identifier	MOSs 6322, 6323, 6324
Prerequisites	Prior technical training and experience as helicopter electrical systems line maintenance technicians/crewchiefs.

Title	**VH-60N Automatic Flight Control System Maintenance Course**
Description	This course provides qualified Marine Helicopter Technicians with the skills and knowledge required for operating, testing, adjusting and maintaining the automatic stabilization equipment installed in the VH-60N.
Location	HMX-1 Quantico, Virginia
Length	10 days
RFT date	Currently available
TTE/TD	VH-60N
Skill identifier	MOSs 6322, 6323, 6324
Prerequisites	Prior technical training and experience as a helicopter electrical systems line maintenance technician/crewchiefs, and have previously attended VH-60N Electrical Systems Maintenance Course.

b. Airframes and Flight Line

Title	**VH-60N Vibration Analysis Maintenance Course**
Description	This course provides qualified helicopter mechanic’s with the skills and knowledge required to operate the standard United States Navy Vibration Analysis Test Set (VATS) in support of the VH-60N.

Location	HMX-1 Quantico, Virginia
Length	2 days
RFT date	Currently available
TTE/TD	VATS
Skill identifier	MOSs 6152, 6153, 6154, 6112, 6113, 6114, 6172, 6173, 6174
Prerequisites	Must be, a qualified U.S. Government helicopter mechanics/technicians with prior technical training and experience as helicopter airframe and powertrain systems, line maintenance, technicians/crewchiefs.

Title	**VH-60N Airframe and Powertrain Systems Course**
Description	This course provides qualified Marine Helicopter Mechanic's with the skills and knowledge required to operate, test, and maintain the mechanical airframe and powerplant systems and components of the VH-60N.
Location	HMX-1 Quantico, Virginia
Length	22 days
RFT date	Currently available
TTE/TD	T-700-GE-401 engine
Skill identifier	MOSs 6152, 6153, 6154, 6112, 6113, 6114, 6172, 6173, 6174
Prerequisites	Must be a qualified U.S. Government helicopter mechanics/technicians with prior technical training and experience as helicopter airframe and powertrain systems, line maintenance, technicians/crewchiefs.

c. Airframes only

Title	**Composite Material Repair Course**
Description	This course provides training in the repair techniques for rotor blades, kevlar, and other composite materials used on the CH-53E, VH-3D and VH-60N.
Location	HMX-1 Quantico, Virginia
Length	10 days
RFT date	Currently available

TTE/TD	None required
Skill identifier	MOSs 6152, 6153, 6154
Prerequisites	Must be a qualified U.S. Government helicopter mechanics/technicians with prior technical training and experience as helicopter airframe and powertrain systems, line maintenance, technicians.

Title	**Refrigerant Recycling Environmental Protection Agency (EPA) Certification Course**
Description	This course provides qualified VH-60N mechanics with the knowledge required for successfully completing the EPA refrigerant recovery certification test under section 608 of the Clean Air Act of 1990.
Location	HMX-1 Quantico, Virginia
Length	5 days
RFT date	Currently available
TTE/TD	VH-60N ECS pallet
Skill identifier	MOSs 6152, 6153, 6154
Prerequisites	Must be a qualified U.S. Government helicopter mechanics/technicians with prior technical training and experience as helicopter airframe and powertrain systems, line maintenance, technicians/crewchiefs.

d. Flight Line

Title	**VH-60N Flight Control System Rigging Course**
Description	This course provides qualified Marine Helicopter Mechanic’s with the skills and knowledge required to rig the main and tail rotor systems of the VH-60N.
Location	HMX-1 Quantico, Virginia
Length	4 days
RFT date	Currently available
TTE/TD	VH-60N flight control rigging and adjustment kit
Skill identifier	MOSs 6112, 6113, 6114, 6172, 6173, 6174

Prerequisites ..... Must be a qualified U.S. Government helicopter mechanics/technicians with prior technical training and experience with helicopter flight controls.

Title ..... VH-60N Air Conditioning System Maintenance Course

Description ..... This course provides qualified Marine Helicopter mechanics and technicians with the skills and knowledge required to operate, test, inspect, and maintain the air conditioning systems and components of the VH-60N Helicopter.

Location ..... HMX-1 Quantico, Virginia

Length ..... 2 days

RFT date ..... Currently available

TTE/TD ..... VH-60N ECS pallet

Skill identifier .... MOSs 6112, 6113, 6114, 6172, 6173, 6174

Prerequisites ..... Must be a qualified U.S. Government helicopter mechanics/technicians with prior technical training and experience as helicopter line maintenance technicians/crewchiefs.

c. Student Profiles. The following table shows the prerequisite skill requirements of personnel ordered into HMX-1.

SKILL IDENTIFIER	PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS
MOSs 6112	M-601-2414, CH-46 Power Plants Trains and Rotors Organizational Maintenance Course C-600-3601, Communication Indoctrination Course C-600-9422, CH-46 Mechanical Organizational Maintenance Course

SKILL IDENTIFIER	PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS
MOSs 6113	M-601-2720, CH-53E Power Plants and Related Systems Maintenance C-600-3601, Communication Indoctrination Course C-602-9456, CH-53 Mechanics Organizational Maintenance Course
MOSs 6114	M-601-2014, AH-1T/J and UH-1N Power Plants Power Trains and Rotors Maintenance C-600-3601, Communication Indoctrination Course C-601-9351, AH-1W Power Trains and Related Systems Course C-601-9352, H-1 Combination Maintenance Course C-600-9355, UH-1N Power Trains and Rotors and Related Navy Mechanics Course
MOS 6152	M-602-2486, Helicopter Airframe Mechanic CH-46 C-600-3601, Communication Indoctrination Course C-600-3419, H-46 Fiberglass Rotor Blade Repair Organizational Maintenance Course C-603-3419, H46 Structure and Hydraulics Course
MOS 6153	M-602-2781, Helicopter Airframe Mechanic CH-53 C-600-3601, Communication Indoctrination Course C-603-9444, CH-53 Airframes Systems Organizational Maintenance Course
MOS 6154	M-602-2081, Helicopter Airframe Mechanic A/UH-1 C-600-3601, Communication Indoctrination Course C-600-9363, H1 Airframes Systems Organizational Maintenance Course
MOS 6172	Prerequisite is MOS 6112
MOS 6173	Prerequisite is MOS 6113
MOS 6174	Prerequisite is MOS 6114

SKILL IDENTIFIER	PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS
MOS 6322	M-102-2424, CH-46 Communication Navigation Identification Systems Organizational Maintenance C-600-3601, Communication Indoctrination Course C-602-3421, H-46 Electrical and Instrument Course C-602-3428, H-46 Automatic Flight Control System Course C-102-3419, H-46 Electrical Counter Measures Course C-102-3416, H-46 Navigation/Communication and Identification Friend or Foe Course C-102-3421, H-46 Cockpit Communication/Navigation Systems Course C-198-3416, H-46 Night Vision Goggle/Heads Up Display Course
MOS 6323	M-102-2731, CH-53E Communications/Electrical System Organizational Maintenance C-600-3601, Communication Indoctrination Course C-602-9441, CH-53 Electrical Systems Course C-602-9451, CH-53E Automatic Flight Control System Course C-102-9945, CH-53A/D/E Communication/Navigation/Identification/Systems Organizational Maintenance Course
MOS 6324	M-102-2024, CH-46 Communication Navigation Identification Systems Organizational Maintenance C-600-3601, Communication Indoctrination Course C-102-9354, H-1 Communications, Navigation Systems Course C-602-9360, H-1 Electrical and Stabilization Control Augmentation System Course C-198-9351, AH-1 Tactically Operated Wire Guided Hellfire Missile System Course C-602-3357, H-1 Wire Bundle Repair Course
MOS 7562	Qualified in CH-46E
MOS 7563	Qualified in UH-1N
MOS 7564	Qualified in CH-53D

SKILL IDENTIFIER	PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS
MOS7565	Qualified in AH-1W
MOS 7566	Qualified in CH-53E

d. Training Pipelines. NA

I. ONBOARD (IN-SERVICE) TRAINING. Pilots and aircrew must comply with annual flight hour requirements, set forth in OPNAVINST 3710.7 to assure an acceptable minimum level of readiness and to enhance aviation safety.

NAVAL AVIATOR (pilots with less than 20 years aviation experience)

	Semiannual	Annual (Fiscal Year)
Pilot Time	40	100
Night Time	6	12
Instrument Time	6	12

SPECIAL CREW (communication systems operators and crewchiefs)

	Semiannual	Annual (Fiscal Year)
Flight Time	25	50

1. Proficiency or Other Training Organic to the New Development. The Curriculum Outline will enable instructors to incorporate the APT into their current pilot courses efficiently and will provide essential support for standardizing training.

2. Personnel Qualification Standards. NA

3. Other Onboard or In-Service Training Packages. Marine Corps onboard training is based on the current series of Marine Corps Order P4790.12, Individual Training Standards System and Maintenance Training Management and Evaluation Program (MATMEP). This program is designed to meet Marine Corps, as well as Navy OPNAVINST 4790.2 series, maintenance training requirements. It is a performance-based, standardized, level-progressive, documentable, training management and evaluation program. It identifies and prioritizes task inventories by MOS through a front-end analysis process that identifies task, skill, and knowledge requirements of each MOS. Maintenance Training Improvement Plan questions coupled to MATMEP tasks will help identify training deficiencies that can be enhanced with refresher training. (MATMEP is planned to be replaced by the Aviation Maintenance Training Continuum System.)

J. LOGISTICS SUPPORT

1. Manufacturer and Contract Numbers

CONTRACT NUMBER	MANUFACTURER	ADDRESS
N00019-98-C-0136 N00019-01-C-0024	United Technologies Corporation, Sikorsky Aircraft Division	6900 Main Street Stratford, C 06602

2. Program Documentation. The current Integrated Logistics Support Plan was approved 05 August 1998. The contractor provides the Integrated Logistic Support for the VH-60N SPAR effort.

3. Technical Data Plan. The following VH-60N technical manuals are required and currently available to support the VH-60N. No changes are required:

- Service Unique Flight Manuals (NATOPS)
- IETM
- Maintenance Instruction Manuals
- Structural Repair Publications
- Illustrated Parts Breakdown
- MRC
- VH-60N NATOPS Pilot's Pocket Checklist

4. Test Sets, Tools, and Test Equipment. Unique requirements for special tools, test sets, and test equipment are provided for by the squadron. The squadron maintains a document of materials that lists all required special and unique items. These materials are squadron assets and utilized by the training contractor to aid in training. Material items include aircraft test equipment, platform unique tools manufactured commercially, and platform unique tools. Some of these tools are manufactured locally.

5. Repair Parts. The VH-60N supply support is a "closed loop" system. Special avionics parts are managed by the Naval Air Warfare Center Aircraft Divisions Patuxent River, and Engines, APUs and their related parts are managed by the NAVAIRSYSCOM Assistant Program Manager for Logistics (APML). NAVAIRSYSCOM APML controls all parts. All components once repaired or overhauled are specifically, identified and marked, to be returned to the VH inventory for reissue on VH aircraft only.

6. Human Systems Integration. NA

K. SCHEDULES

1. **Installation and Delivery Schedules.** NA

2. **Ready For Operational Use Schedule.** NA

3. **Time Required to Install at Operational Sites.** NA

4. **Foreign Military Sales and Other Source Delivery Schedule.** NA

5. **Training Device and Technical Training Equipment Delivery Schedule**

TRAINING DEVICE	DELIVERY DATE	QUANTITY	LOCATION
APT	July 2002	1	HMX-1 Quantico, Virginia
VH-60N Composite Maintenance Trainer	To Be Determined	1	HMX-1 Quantico, Virginia

Contractor Logistic Support for the APTs will be initially provided by the prime contractor. The prime contractor will also be required to deliver an Initial Spares Support List (ISSL) and maintain the simulators until the Material Support Date. The ISSL was provided in May 2001. Initial spares are funded by the procuring command out of a separate appropriation.

A contract for Operations and Support of the APTs will be awarded in FY04. The contract will detail day to day management of the simulators, performance of routine maintenance, and incorporation of Operational Safety and Improvements Programs and Technical Engineering Change Proposals. An In-Service Engineering Office will be established at Quantico to monitor the performance of the awarded Operations and Support contract.

L. GOVERNMENT-FURNISHED EQUIPMENT AND CONTRACTOR-FURNISHED EQUIPMENT TRAINING REQUIREMENTS. NA

M. RELATED NTSPs AND OTHER APPLICABLE DOCUMENTS

DOCUMENT OR NTSP TITLE	DOCUMENT OR NTSP NUMBER	PDA CODE	STATUS
Joint Training System Plan For the V-22 Osprey	N88-NTSP-A-508412D/A	PMA 275	Approved August 99
CH-53E Helicopter	N88-NTSP-A-50-7604G/A	PMA 261	Approved March 01

DOCUMENT OR NTSP TITLE	DOCUMENT OR NTSP NUMBER	PDA CODE	STATUS
Mission Needs Statement for VH-60N Maintenance Trainer	AAS 72		19 Oct 99

PART II - BILLET AND PERSONNEL REQUIREMENTS

The following elements are not affected by the VH-60N Helicopter and therefore, are not included in Part II of this NTSP:

II.A. Billet Requirements

II.A.2.a. Operational and Fleet Support Activity Deactivation Schedule

II.A.2.b. Billets to be Deleted in Operational and Fleet Support Activities

II.A.2.c. Total Billets to be Deleted in Operational and Fleet Support Activities

II.A.3. Training Activities Instructor and Support Billet Requirements

PART II - BILLET AND PERSONNEL REQUIREMENTS

II.A. BILLET REQUIREMENTS

II.A.1.a. OPERATIONAL AND FLEET SUPPORT ACTIVITY ACTIVATION SCHEDULE

SOURCE: PMA261 **DATE:** 12/1/99

ACTIVITY, UIC		PFYs	CFY01	FY02	FY03	FY04	FY05
OPERATIONAL ACTIVITIES - USMC							
HMX-1 Marine Corps Helicopter Squadron	55615	1	0	0	0	0	0
TOTAL:		1	0	0	0	0	0

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS OFF	BILLETS ENL	DESIG/ RATING	PNEC / SNEC/ PMOS / SMOS
OPERATIONAL ACTIVITIES - USMC				
HMX-1 Marine Corps Helicopter Squadron, 55615				
USMC	45	0	CAPT	
	1	0	CWO3	
	17	0	MAJ	
	0	3	CPL	6046
	0	1	CPL	6060
	0	3	CPL	6072
	0	3	CPL	6152
	0	1	CPL	6153
	0	7	CPL	6154
	0	2	CPL	6172
	0	4	CPL	6173
	0	4	CPL	6323
	0	2	CPL	6324
	0	1	CPL	6531
	0	2	GYSGT	2537
	0	4	GYSGT	2549
	0	1	GYSGT	6047
	0	1	GYSGT	6060
	0	3	GYSGT	6113
	0	1	GYSGT	6124
	0	1	GYSGT	6153
	0	1	GYSGT	6174
	0	2	GYSGT	6323
	0	2	GYSGT	6324
	0	1	LCPL	6046
	0	4	LCPL	6113
	0	2	LCPL	6122
	0	3	LCPL	6153
	0	7	LCPL	6154
	0	4	LCPL	6173
	0	3	LCPL	6323
	0	3	LCPL	6324
	0	1	MGYSGT	2591
	0	1	MGYSGT	6391
	0	1	SGT	6042
	0	2	SGT	6047
	0	1	SGT	6060
	0	2	SGT	6072
	0	4	SGT	6112
	0	4	SGT	6113
	0	4	SGT	6153
	0	3	SGT	6172
	0	7	SGT	6173
	0	3	SGT	6322
	0	4	SGT	6323

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS OFF	BILLETS ENL	DESIG/ RATING	PNEC / SNEC PMOS / SMOS
USMC	0	2	SGT	6324
	0	1	SGT	6531
	0	10	SSGT	2537
	0	4	SSGT	6113
	0	1	SSGT	6114
	0	2	SSGT	6122
	0	1	SSGT	6152
	0	2	SSGT	6153
	0	2	SSGT	6154
	0	2	SSGT	6172
	0	2	SSGT	6173
	0	2	SSGT	6322
	0	5	SSGT	6323
ACTIVITY:	63	149		

II.A.1.c. TOTAL BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

DESIG/ RATING	PNEC/SNEC PMOS/SMOS	PFYs OFF	PFYs ENL	CFY01 OFF	CFY01 ENL	FY02 OFF	FY02 ENL	FY03 OFF	FY03 ENL	FY04 OFF	FY04 ENL	FY05 OFF	FY05 ENL
USMC OPERATIONAL ACTIVITIES - USMC													
CAPT		45		0		0		0		0		0	
CWO3		1		0		0		0		0		0	
MAJ		17		0		0		0		0		0	
CPL	6046		3		0		0		0		0		0
CPL	6060		1		0		0		0		0		0
CPL	6072		3		0		0		0		0		0
CPL	6152		3		0		0		0		0		0
CPL	6153		1		0		0		0		0		0
CPL	6154		7		0		0		0		0		0
CPL	6172		2		0		0		0		0		0
CPL	6173		4		0		0		0		0		0
CPL	6323		4		0		0		0		0		0
CPL	6324		2		0		0		0		0		0
CPL	6531		1		0		0		0		0		0
GYSGT	2537		2		0		0		0		0		0
GYSGT	2549		4		0		0		0		0		0
GYSGT	6047		1		0		0		0		0		0
GYSGT	6060		1		0		0		0		0		0
GYSGT	6113		3		0		0		0		0		0
GYSGT	6124		1		0		0		0		0		0
GYSGT	6153		1		0		0		0		0		0
GYSGT	6174		1		0		0		0		0		0
GYSGT	6323		2		0		0		0		0		0
GYSGT	6324		2		0		0		0		0		0
LCPL	6046		1		0		0		0		0		0
LCPL	6113		4		0		0		0		0		0
LCPL	6122		2		0		0		0		0		0
LCPL	6153		3		0		0		0		0		0
LCPL	6154		7		0		0		0		0		0
LCPL	6173		4		0		0		0		0		0
LCPL	6323		3		0		0		0		0		0
LCPL	6324		3		0		0		0		0		0
MGYSGT	2591		1		0		0		0		0		0
MGYSGT	6391		1		0		0		0		0		0
SGT	6042		1		0		0		0		0		0
SGT	6047		2		0		0		0		0		0
SGT	6060		1		0		0		0		0		0
SGT	6072		2		0		0		0		0		0
SGT	6112		4		0		0		0		0		0
SGT	6113		4		0		0		0		0		0
SGT	6153		4		0		0		0		0		0
SGT	6172		3		0		0		0		0		0
SGT	6173		7		0		0		0		0		0
SGT	6322		3		0		0		0		0		0
SGT	6323		4		0		0		0		0		0

II.A.1.c. TOTAL BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

DESIG/ RATING	PNEC/SNEC PMOS/SMOS	PFYs OFF	PFYs ENL	CFY01 OFF	CFY01 ENL	FY02 OFF	FY02 ENL	FY03 OFF	FY03 ENL	FY04 OFF	FY04 ENL	FY05 OFF	FY05 ENL
SGT	6324		2		0		0		0		0		0
SGT	6531		1		0		0		0		0		0
SSGT	2537		10		0		0		0		0		0
SSGT	6113		4		0		0		0		0		0
SSGT	6114		1		0		0		0		0		0
SSGT	6122		2		0		0		0		0		0
SSGT	6152		1		0		0		0		0		0
SSGT	6153		2		0		0		0		0		0
SSGT	6154		2		0		0		0		0		0
SSGT	6172		2		0		0		0		0		0
SSGT	6173		2		0		0		0		0		0
SSGT	6322		2		0		0		0		0		0
SSGT	6323		5		0		0		0		0		0

SUMMARY TOTALS

USMC OPERATIONAL ACTIVITIES - USMC

63	149	0	0	0	0	0	0	0	0	0	0

GRAND TOTALS

USMC - USMC

63	149	0	0	0	0	0	0	0	0	0	0

II.A.4. CHARGEABLE STUDENT BILLET REQUIREMENTS

ACTIVITY, LOCATION, UIC	USN/ USMC	PFYs OFF	PFYs ENL	CFY01 OFF	CFY01 ENL	FY02 OFF	FY02 ENL	FY03 OFF	FY03 ENL	FY0 OFF	FY0 ENL	FY05 OFF	FY05 ENL
HMX-1, Quantico, Virginia, 55615													
	USMC	0.3	2.4	0.3	2.4	0.3	2.4	0.3	2.4	0.3	2.4	0.3	2.4
SUMMARY TOTALS:													
	USMC	0.3	2.4	0.3	2.4	0.3	2.4	0.3	2.4	0.3	2.4	0.3	2.4
GRAND TOTALS:													
		0.3	2.4	0.3	2.4	0.3	2.4	0.3	2.4	0.3	2.4	0.3	2.4

II.A.5. ANNUAL INCREMENTAL AND CUMULATIVE BILLETS

DESIG/ RATING	PNEC/SNEC/ PNEC/SNEC	BILLET BASE	CFY01 +/-	CFY01 CUM	FY02 +/-	FY02 CUM	FY03 +/-	FY03 CUM	FY04 +/-	FY04 CUM	FY05 +/-	FY05 CUM
a. OFFICER – USN			NA									
b. ENLISTED - USN			NA									
c. OFFICER - USMC												
Operational Billets USMC and AR												
CAPT		45	0	45	0	45	0	45	0	45	0	45
CWO3		1	0	1	0	1	0	1	0	1	0	1
MAJ		17	0	17	0	17	0	17	0	17	0	17
Chargeable Student Billets USMC and AR												
		0	0	0	0	0	0	0	0	0	0	0
TOTAL USMC OFFICER BILLETS:												
Operational		63	0	63	0	63	0	63	0	63	0	63
Chargeable Student		0	0	0	0	0	0	0	0	0	0	0
d. ENLISTED - USMC												
Operational Billets USMC and AR												
CPL	6046	3	0	3	0	3	0	3	0	3	0	3
CPL	6060	1	0	1	0	1	0	1	0	1	0	1
CPL	6072	3	0	3	0	3	0	3	0	3	0	3
CPL	6152	3	0	3	0	3	0	3	0	3	0	3
CPL	6153	1	0	1	0	1	0	1	0	1	0	1
CPL	6154	7	0	7	0	7	0	7	0	7	0	7
CPL	6172	2	0	2	0	2	0	2	0	2	0	2
CPL	6173	4	0	4	0	4	0	4	0	4	0	4
CPL	6323	4	0	4	0	4	0	4	0	4	0	4
CPL	6324	2	0	2	0	2	0	2	0	2	0	2
CPL	6531	1	0	1	0	1	0	1	0	1	0	1
GYSGT	2537	2	0	2	0	2	0	2	0	2	0	2
GYSGT	2549	4	0	4	0	4	0	4	0	4	0	4
GYSGT	6047	1	0	1	0	1	0	1	0	1	0	1
GYSGT	6060	1	0	1	0	1	0	1	0	1	0	1
GYSGT	6113	3	0	3	0	3	0	3	0	3	0	3
GYSGT	6124	1	0	1	0	1	0	1	0	1	0	1

II.A.5. ANNUAL INCREMENTAL AND CUMULATIVE BILLETS

DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS	BILLET BASE	CFY01 +/-	CFY01 CUM	FY02 +/-	FY02 CUM	FY03 +/-	FY03 CUM	FY04 +/-	FY04 CUM	FY05 +/-	FY05 CUM
GYSGT	6153		1	0	1	0	1	0	1	0	1	0	1
GYSGT	6174		1	0	1	0	1	0	1	0	1	0	1
GYSGT	6323		2	0	2	0	2	0	2	0	2	0	2
GYSGT	6324		2	0	2	0	2	0	2	0	2	0	2
LCPL	6046		1	0	1	0	1	0	1	0	1	0	1
LCPL	6113		4	0	4	0	4	0	4	0	4	0	4
LCPL	6122		2	0	2	0	2	0	2	0	2	0	2
LCPL	6153		3	0	3	0	3	0	3	0	3	0	3
LCPL	6154		7	0	7	0	7	0	7	0	7	0	7
LCPL	6173		4	0	4	0	4	0	4	0	4	0	4
LCPL	6323		3	0	3	0	3	0	3	0	3	0	3
LCPL	6324		3	0	3	0	3	0	3	0	3	0	3
MGYSGT	2591		1	0	1	0	1	0	1	0	1	0	1
MGYSGT	6391		1	0	1	0	1	0	1	0	1	0	1
SGT	6042		1	0	1	0	1	0	1	0	1	0	1
SGT	6047		2	0	2	0	2	0	2	0	2	0	2
SGT	6060		1	0	1	0	1	0	1	0	1	0	1
SGT	6072		2	0	2	0	2	0	2	0	2	0	2
SGT	6112		4	0	4	0	4	0	4	0	4	0	4
SGT	6113		4	0	4	0	4	0	4	0	4	0	4
SGT	6153		4	0	4	0	4	0	4	0	4	0	4
SGT	6172		3	0	3	0	3	0	3	0	3	0	3
SGT	6173		7	0	7	0	7	0	7	0	7	0	7
SGT	6322		3	0	3	0	3	0	3	0	3	0	3
SGT	6323		4	0	4	0	4	0	4	0	4	0	4
SGT	6324		2	0	2	0	2	0	2	0	2	0	2
SGT	6531		1	0	1	0	1	0	1	0	1	0	1
SSGT	2537		10	0	10	0	10	0	10	0	10	0	10
SSGT	6113		4	0	4	0	4	0	4	0	4	0	4
SSGT	6114		1	0	1	0	1	0	1	0	1	0	1
SSGT	6122		2	0	2	0	2	0	2	0	2	0	2
SSGT	6152		1	0	1	0	1	0	1	0	1	0	1
SSGT	6153		2	0	2	0	2	0	2	0	2	0	2
SSGT	6154		2	0	2	0	2	0	2	0	2	0	2
SSGT	6172		2	0	2	0	2	0	2	0	2	0	2
SSGT	6173		2	0	2	0	2	0	2	0	2	0	2
SSGT	6322		2	0	2	0	2	0	2	0	2	0	2
SSGT	6323		5	0	5	0	5	0	5	0	5	0	5
Chargeable Student Billets USMC and AR													
			3	0	3	0	3	0	3	0	3	0	3
TOTAL USMC ENLISTED BILLETS:													
Operational			149	0	149	0	149	0	149	0	149	0	149

II.A.5. ANNUAL INCREMENTAL AND CUMULATIVE BILLETS

DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS	BILLET BASE	CFY01 +/-	CFY01 CUM	FY02 +/-	FY02 CUM	FY03 +/-	FY03 CUM	FY04 +/-	FY04 CUM	FY05 +/-	FY05 CUM
Chargeable Student			3	0	3	0	3	0	3	0	3	0	3

II.B. PERSONNEL REQUIREMENTS

II.B.1. ANNUAL TRAINING INPUT REQUIREMENTS

CIN, COURSE VH-60N System Familiarization
COURSE LENGTH: 0.8 Weeks **TOUR LENGTH:** NA
ATTRITION FACTOR: USMC: 0% **BACKOUT FACTOR:** 0.00

TRAINING		ACDU/TAR	CFY01		FY02		FY03		FY04		FY05	
ACTIVITY	SOURCE	SELRES	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
HMX-1, Quantico, Virginia												
	USMC	USMC	16		16		16		16		16	
		TOTAL:	16		16		16		16		16	

CIN, COURSE Pilot COMM/NAV System Course
COURSE LENGTH: 0.6 Weeks **TOUR LENGTH:** NA
ATTRITION FACTOR: USMC: 0% **BACKOUT FACTOR:** 0.00

TRAINING		ACDU/TAR	CFY01		FY02		FY03		FY04		FY05	
ACTIVITY	SOURCE	SELRES	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
HMX-1, Quantico, Virginia												
	USMC	USMC	16		16		16		16		16	
		TOTAL:	16		16		16		16		16	

CIN, COURSE VH-COMM/NAV Organizational Maintenance Course
COURSE LENGTH: 2.2 Weeks **TOUR LENGTH:** NA
ATTRITION FACTOR: USMC: 0% **BACKOUT FACTOR:** 0.04

TRAINING		ACDU/TAR	CFY01		FY02		FY03		FY04		FY05	
ACTIVITY	SOURCE	SELRES	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
HMX-1, Quantico, Virginia												
	USMC	USMC		8		8		8		8		8
		TOTAL:		8		8		8		8		8

CIN, COURSE VH-60N Electrical Systems Maintenance Course
COURSE LENGTH: 2.2 Weeks **TOUR LENGTH:** NA
ATTRITION FACTOR: USMC: 0% **BACKOUT FACTOR:** 0.04

TRAINING		ACDU/TAR	CFY01		FY02		FY03		FY04		FY05	
ACTIVITY	SOURCE	SELRES	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
HMX-1, Quantico, Virginia												
	USMC	USMC		8		8		8		8		8
		TOTAL:		8		8		8		8		8

CIN, COURSE VH-60N Automatic Flight Control System Maintenance Course
COURSE LENGTH: 1.6 Weeks **TOUR LENGTH:** NA
ATTRITION FACTOR: USMC: 0% **BACKOUT FACTOR:** 0.00

TRAINING		ACDU/TAR	CFY01		FY02		FY03		FY04		FY05	
ACTIVITY	SOURCE	SELRES	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
HMX-1, Quantico, Virginia												
	USMC	USMC		8		8		8		8		8
		TOTAL:		8		8		8		8		8

II.B.1. ANNUAL TRAINING INPUT REQUIREMENTS

CIN, COURSE VH-60N Vibration Analysis Maintenance Course
COURSE LENGTH: 0.6 Weeks **TOUR LENGTH:** NA
ATTRITION FACTOR: USMC: 0% **BACKOUT FACTOR:** 0.00

TRAINING		ACDU/TAR	CFY01		FY02		FY03		FY04		FY05	
ACTIVITY	SOURCE	SELRES	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
HMX-1, Quantico, Virginia												
	USMC	USMC		18		18		18		18		18
		TOTAL:		18		18		18		18		18

CIN, COURSE VH-60N Airframe and Powertrain Systems Course
COURSE LENGTH: 3.2 Weeks **TOUR LENGTH:** NA
ATTRITION FACTOR: USMC: 0% **BACKOUT FACTOR:** 0.06

TRAINING		ACDU/TAR	CFY01		FY02		FY03		FY04		FY05	
ACTIVITY	SOURCE	SELRES	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
HMX-1, Quantico, Virginia												
	USMC	USMC		19		19		19		19		19
		TOTAL:		19		19		19		19		19

CIN, COURSE Refrigerant Recycling EPA Certification Course
COURSE LENGTH: 1.0 Weeks **TOUR LENGTH:** NA
ATTRITION FACTOR: USMC: 0% **BACKOUT FACTOR:** 0.00

TRAINING		ACDU/TAR	CFY01		FY02		FY03		FY04		FY05	
ACTIVITY	SOURCE	SELRES	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
HMX-1, Quantico, Virginia												
	USMC	USMC		8		8		8		8		8
		TOTAL:		8		8		8		8		8

CIN, COURSE Composite Material Repair Course
COURSE LENGTH: 1.6 Weeks **TOUR LENGTH:** NA
ATTRITION FACTOR: USMC: 0% **BACKOUT FACTOR:** 0.00

TRAINING		ACDU/TAR	CFY01		FY02		FY03		FY04		FY05	
ACTIVITY	SOURCE	SELRES	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
HMX-1, Quantico, Virginia												
	USMC	USMC		8		8		8		8		8
		TOTAL:		8		8		8		8		8

CIN, COURSE VH-60N Flight Control System Rigging Course
COURSE LENGTH: 0.8 Weeks **TOUR LENGTH:** NA
ATTRITION FACTOR: USMC: 0% **BACKOUT FACTOR:** 0.00

TRAINING		ACDU/TAR	CFY01		FY02		FY03		FY04		FY05	
ACTIVITY	SOURCE	SELRES	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
HMX-1, Quantico, Virginia												
	USMC	USMC		11		11		11		11		11
		TOTAL:		11		11		11		11		11

II.B.1. ANNUAL TRAINING INPUT REQUIREMENTS

CIN, COURSE VH-60N Air Conditioning System Maintenance Course
COURSE LENGTH: 0.4 Weeks **TOUR LENGTH:** NA
ATTRITION FACTOR: USMC: 0% **BACKOUT FACTOR:** 0.00

TRAINING ACTIVITY	SOURCE	ACDU/TAR SELRES	CFY01 OFF	CFY01 ENL	FY02 OFF	FY02 ENL	FY03 OFF	FY03 ENL	FY04 OFF	FY04 ENL	FY05 OFF	FY05 ENL
HMX-1, Quantico, Virginia												
	USMC	USMC		11		11		11		11		11
		TOTAL:		11		11		11		11		11

PART III - TRAINING REQUIREMENTS

The following elements are not affected by the VH-60N Helicopter Program and therefore are not included in Part III of this NTSP:

III.A. Training Course Requirements

III.A.1. Initial Training Requirements

III.A.2.b. Planned Courses

III.A.2.c. Unique Courses

III.A.3 Existing Training Phased Out

III.A. Training Course Requirements

III.A.1. Initial Training Requirements

III.A.2. FOLLOW-ON TRAINING

III.A.2.a. EXISTING COURSES

CIN, COURSE VH-60N System Familiarization
TRAINING HMX-1
LOCATION, Quantico, Virginia, 55615

SOURCE: USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
16		16		16		16		16		ATIR
16		16		16		16		16		Output
0.2		0.2		0.2		0.2		0.2		AOB
0.2		0.2		0.2		0.2		0.2		Chargeable

CIN, COURSE Pilot COMM/NAV System Course
TRAINING HMX-1
LOCATION, Quantico, Virginia, 55615

SOURCE: USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
16		16		16		16		16		ATIR
16		16		16		16		16		Output
0.1		0.1		0.1		0.1		0.1		AOB
0.1		0.1		0.1		0.1		0.1		Chargeable

CIN, COURSE VH-COMM/NAV Organizational Maintenance Course
TRAINING HMX-1
LOCATION, Quantico, Virginia, 55615

SOURCE: USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	8		8		8		8		8	ATIR
	8		8		8		8		8	Output
	0.3		0.3		0.3		0.3		0.3	AOB
	0.3		0.3		0.3		0.3		0.3	Chargeable

CIN, COURSE VH-60N Electrical Systems Maintenance Course
TRAINING HMX-1
LOCATION, Quantico, Virginia, 55615

SOURCE: USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	8		8		8		8		8	ATIR
	8		8		8		8		8	Output
	0.3		0.3		0.3		0.3		0.3	AOB
	0.3		0.3		0.3		0.3		0.3	Chargeable

III.A.2.a. EXISTING COURSES

CIN, COURSE VH-60N Automatic Flight Control System Maintenance Course
TRAINING HMX-1
LOCATION, Quantico, Virginia, 55615

SOURCE: USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	**ENL**	**OFF**	**ENL**	**OFF**	**ENL**	**OFF**	**ENL**	**OFF**	**ENL**	
	8		8		8		8		8	ATIR
	8		8		8		8		8	Output
	0.2		0.2		0.2		0.2		0.2	AOB
	0.2		0.2		0.2		0.2		0.2	Chargeable

CIN, COURSE VH-60N Vibration Analysis Maintenance Course
TRAINING HMX-1
LOCATION, Quantico, Virginia, 55615

SOURCE: USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	**ENL**	**OFF**	**ENL**	**OFF**	**ENL**	**OFF**	**ENL**	**OFF**	**ENL**	
	18		18		18		18		18	ATIR
	18		18		18		18		18	Output
	0.1		0.1		0.1		0.1		0.1	AOB
	0.1		0.1		0.1		0.1		0.1	Chargeable

CIN, COURSE VH-60N Airframe and Powertrain System
TRAINING HMX-1
LOCATION, Quantico, Virginia, 55615

SOURCE: USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	**ENL**	**OFF**	**ENL**	**OFF**	**ENL**	**OFF**	**ENL**	**OF**	**ENL**	
	19		19		19		19		19	ATIR
	19		19		19		19		19	Output
	1.0		1.0		1.0		1.0		1.0	AOB
	1.0		1.0		1.0		1.0		1.0	Chargeable

CIN, COURSE Refrigerant Recycling EPA Certification Course
TRAINING HMX-1
LOCATION, Quantico, Virginia, 55615

SOURCE: USMC STUDENT CATEGORY: USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	**ENL**	**OFF**	**ENL**	**OFF**	**ENL**	**OFF**	**ENL**	**OFF**	**ENL**	
	8		8		8		8		8	ATIR
	8		8		8		8		8	Output
	0.1		0.1		0.1		0.1		0.1	AOB
	0.1		0.1		0.1		0.1		0.1	Chargeable

III.A.2.a. EXISTING COURSES

CIN, COURSE Composite Material Repair Course

TRAINING HMX-1
LOCATION, Quantico, Virginia, 55615

SOURCE: USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	8		8		8		8		8	ATIR
	8		8		8		8		8	Output
	0.2		0.2		0.2		0.2		0.2	AOB
	0.2		0.2		0.2		0.2		0.2	Chargeable

CIN, COURSE VH-60N Flight Control System Rigging Course
TRAINING HMX-1
LOCATION, Quantico, Virginia, 55615

SOURCE: USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	11		11		11		11		11	ATIR
	11		11		11		11		11	Output
	0.1		0.1		0.1		0.1		0.1	AOB
	0.1		0.1		0.1		0.1		0.1	Chargeable

CIN, COURSE VH-60N Air Conditioning System Maintenance Course
TRAINING HMX-1
LOCATION, Quantico, Virginia, 55615

SOURCE: USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	11		11		11		11		11	ATIR
	11		11		11		11		11	Output
	0.1		0.1		0.1		0.1		0.1	AOB
	0.1		0.1		0.1		0.1		0.1	Chargeable

PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS

The following elements are not affected by the VH-60N Helicopter Program and therefore, are not included in this NTSP:

IV.A. Training Hardware

IV.A.1. TTE/GPTE/SPTE/ST/GPETE/SPETE

IV.a.2 Training Devices

IV.B. Courseware Requirements

IV.B.1 Training Services

IV.B.2 Curricula materials and Training Aids

IV.B.3 Technical Manuals

IV.C Facility Requirements

IV.C.1 Facility Requirements Summary (Space/Support) by Activity

NOTE: Upon confirmation with the squadron, it was determined that the training hardware, training devices, all courseware and training facilities, are assets of the squadron. The primary training contract at HMX-1 is for instruction with, some courseware development by the TC.

PART V - MPT MILESTONES

COG CODE	MPT MILESTONES	DATE	STATUS
DA	Began analysis of manpower, personnel, and training requirements	2/00	Completed
DA	Distributed Draft NTSP	12/00	Completed
OPO	Approve and promulgate NTSP.	9/01	Pending

PART VI ACTION ITEMS/ACTION REQUIRED

No Decision Items or Actions Pending

PART VII - POINTS OF CONTACT

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PART VII - POINTS OF CONTACT

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PART VII - POINTS OF CONTACT

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SUMMARY OF COMMENTS

ON THE

VH-60N HELICOPTER

DRAFT NAVY TRAINING SYSTEM PLAN

OF December 2000

N88-NTSP-A-50-0008/D

Prepared by: Beth Brandenburg
Contact at: (703) 243-7675
Date submitted: 5/15/01

COMMENTS / RECOMMENDATIONS ON THE

VH-60N HELICOPTER

DRAFT NAVY TRAINING SYSTEM PLAN

TABLE OF CONTENTS

ACTIVITIES PROVIDING COMMENTS:

Aviation Program Manager (PMA 2614)..... 1

Commander, Naval Air Systems Command (PMA-2052B)..... 5

COMMENTS / RECOMMENDATIONS ON THE

VH-60N HELICOPTER

DRAFT NAVY TRAINING SYSTEM PLAN

ACTIVITY NAME: Naval Air Systems Command, Aviation Program Manager (PMA 2614)

COMMENT: I-5, Training Concept

Because a VH-60N APT is currently in the acquisition pipeline, a paragraph should be written to address how the APT will be used when delivered.

INCORPORATED: YES

REMARKS: This is addressed on page I-5, 2nd paragraph.

COMMENT: I-7, last bulleted item

Recommend conducting a media analysis, training technology assessment, and a training effectiveness analysis to determine the feasibility of the proposed media alternatives.

INCORPORATED: YES

REMARKS:

COMMENT: I-8, (1) Pilot Training

Once the APT's are delivered, the System Familiarization Courses for each aircraft should be revised to utilize the valuable training aid in the APT's. This means planning needs to commence now.

INCORPORATED: YES

REMARKS:

COMMENT: I-16, 1. Proficiency or Other Training Organic to the New Development

The new APT's could be an invaluable asset in staying "current" and in compliance with OPNAVINST 3710.7. Pilot and Aircrew curriculum needs to be developed to utilize the APT's in proficiency training.

INCORPORATED: YES

REMARKS:

COMMENT: Part III, Training Requirements

Some discussion needs to transpire on how the planned APT's will be utilized to enhance the existing System Familiarization courses and the development of Pilot and Aircrew proficiency courses.

COMMENTS / RECOMMENDATIONS ON THE

VH-60N HELICOPTER

DRAFT NAVY TRAINING SYSTEM PLAN

INCORPORATED: YES

REMARKS: Addressed in Part I, page I-5, 3rd paragraph.

COMMENT: Page IV-1, Training Hardware, Section IV.A.2, Training Devices

As a VH-60N APT is currently in the acquisition pipeline and will require Logistics Support, information should be supplied as to the HMX-1 support concept/plan.

INCORPORATED: YES

REMARKS: Addressed in Part I, page I-17.

COMMENT: IV-1, Facility Requirements, Section IV.C.1, Facility Requirements Summary (Space/Support) by Activity

As a VH-60N APT is currently in the acquisition pipeline and does require facility infrastructure, those requirements should be stated.

INCORPORATED: YES

REMARKS: Addressed in Part I, page I-5, a, 2nd paragraph.

COMMENT: Pages iii and iv, List of Abbreviations and Acronyms

Change “Proficiency” to “Procedures” for APT and add MCO to the List of Abbreviations and Acronyms

INCORPORATED: YES

REMARKS:

COMMENT: I-5 through I-7

Check formatting, some subsections are missing numbers and the paragraphs of the Executive Summary are inconsistent font sizes. Numbering all subsections of the document would make it easier to reference specific sections.

INCORPORATED: YES

REMARKS:

COMMENT: Page i, Executive Summary, 2nd paragraph

Change “Proficiency” to “Procedures” and add (APT).

INCORPORATED: YES

COMMENTS / RECOMMENDATIONS ON THE

VH-60N HELICOPTER

DRAFT NAVY TRAINING SYSTEM PLAN

REMARKS:

COMMENT: Page v, Preface

States that this NTSP is the first iteration, however, the letter "D" in the NTSP number suggests that the present copy is a fourth update of the initial NTSP. Also, the page headers do not include the letter "D" in them.

INCORPORATED: NO

REMARKS: The letter "D" indicates that it is a "Draft" version of the NTSP and it is the first iteration.

COMMENT: Page I-2, Section G.2 "DESCRIPTION OF NEW DEVELOPMENT

"Physical Description," table: do the empty boxes indicate non-applicable dimensions?

INCORPORATED: YES

REMARKS:

COMMENT: Page I-5, Training Concept, Pilot Sub-section, 1st Sentence

Insert "currently" after "squadron." Add at end of paragraph: "After fielding of the APT, HMX-1 will have the capability to conduct both initial and refresher pilot training locally."

INCORPORATED: YES

REMARKS:

COMMENT: Page I-5, Training Concept, 1st Paragraph: 3rd Sentence

Change "may" to "currently"

INCORPORATED: YES

REMARKS:

COMMENT: I-7, table, 2nd row

Change DEVICE from "VH-60N Composite Maintenance Trainer to "VH-60N APT." Change COMMENTS to "Device 2F181, estimated fielding at HMX-1 July 2002."

INCORPORATED: YES

COMMENTS / RECOMMENDATIONS ON THE

VH-60N HELICOPTER

DRAFT NAVY TRAINING SYSTEM PLAN

REMARKS: Changed VH-60N pilot simulator to VH-60N APT as the VH-60N composite maintenance trainer is a different device and is still being planned for possibly FY04.

COMMENT: I-17, table, row 1

Change install date from "To Be Decided (TBD) " to July 2002.

INCORPORATED: YES

REMARKS:

COMMENTS / RECOMMENDATIONS ON THE

VH-60N HELICOPTER

DRAFT NAVY TRAINING SYSTEM PLAN

ACTIVITY NAME: Commander, Naval Air Systems Command (PMA-2052B)

COMMENT: I-5 paragraph 4

Not clear who is paying for the Aircrew Proficiency Trainer and the estimated delivery date is not given. Recommend clarification.

INCORPORATED: YES

REMARKS:

COMMENT: Page I-6

Indicates a maintenance trainer specification was completed 14 Jan 00 but is not clear who is paying for the training device and what is the estimated date of delivery.

INCORPORATED: YES

REMARKS: This comment is now on page I-7.

COMMENT:

Since the VH-60N will remain in service until at least 2015 with the possibility of being extended until 2025, the static content of the courses lead to the recommendation that consideration be given to converting instruction to CBT and that such plans be included in the NTSP.

INCORPORATED: YES

REMARKS: Addressed in Part I, page I-6 and I-7.